AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original to parent) A method performed by a data processing system having a memory, comprising the steps of:

parsing a text description of a circuit, said text description stored in the memory, said text description including a loop with a delayed signal assignment having a delay value;

translating said text description into a digital circuit representation in said memory, said digital circuit representation including a pipeline; and

setting a latency of said pipeline equal to said delay value.

2. (Original to parent) The method of claim 1, wherein said loop further includes N wait statements, where N is greater than zero, said method further comprising the step of setting an initiation interval of said pipeline equal to N.

3. (Original to parent) The method of claim 1, wherein said text description is written in Verilog and said delayed signal assignment uses a Verilog "#" operator.

4. (Original to parent, amended twice) The method of claim 2[3], wherein said wait statements transition on[use] Verilog "@posedge" statements.

5. (Original to parent, amended twice) The method of claim 2[3], wherein said wait statements transition on[use] Verilog "@negedge" statements.

6. (Original to parent, amended once) The method of claim 2[1], wherein said text description is written in VHDL, said delayed signal assignment uses a VHDL ""after"" clause, and said wait statements use VHDL "wait" statements.

7. (Original to parent) A method, performed by a data processing system having a memory of building a digital circuit representation including a pipeline in the memory from a textual description of a loop, comprising the steps of:

identifying a loop carry dependency in said loop;

identifying a producer operation of said loop carry dependency;

identifying a consumer operation of said loop carry dependency;

determining a number, n, of cycles within which said producer operation must be scheduled after said consumer operation;

instantiating a placeholder node in said memory;

node-locking said placeholder node so that it must be scheduled n cycles after said consumer operation; and

constraining said producer operation to be scheduled before said placeholder node.

8. (Original to parent) The method of claim 7, wherein the step of node-locking said placeholder node further comprises the step of creating a template structure in said memory which includes said placeholder node and said consumer operation.

9. (Original to parent) The method of claim 8,

wherein said producer operation is included in a second template structure in said memory, and

wherein the step of constraining said producer operation further comprises the step of constraining said second template structure to be scheduled before said template structure.

10. (Original to parent, amended once) The method of claim 7, wherein n is equal to an initiation interval of said pipeline multiplied by a number of iterations of said loop which execute before data produced by said producer operation is consumed by said consumer operation.

11. (Original to parent) A method, performed by a data processing system having a memory, of building a digital circuit representation in said memory, said digital circuit representation including a pipeline derived from a textual description of a loop, said method comprising the steps of:

identifying an access dependency of said loop;

identifying a first access operation of said access dependency;

identifying a second access operation of said access dependency;

determining a number, n, of cycles within which said second access operation must be scheduled after said first access operation;

instantiating a placeholder node in said memory;

node-locking said placeholder node so that it must be scheduled n cycles after said first access operation; and

constraining a scheduling order of said second access operation and said placeholder node.

12. (Original to parent, amended once) The method of claim 11,

wherein said first access operation is chosen from a[the] group of access operations including a memory read, a memory write, a signal write and a port write,

said second access operation is chosen from the group of access operations including a memory read, a memory write, a signal read, a signal write, a port read and a port write, and

the step of constraining said scheduling order of said second access operation and said placeholder node further includes the step of forcing said second access operation to be scheduled before said placeholder node.

13. (Original to parent, amended once) The method of claim 11,

wherein said first access operation is chosen from a[the] group of access operations including a memory read, a memory write, a signal read, a signal write, a port read and a port write,

said second access operation is chosen from the group of access operations including a memory read, a memory write, a signal write and a port write, and

the step of constraining said scheduling order of said second access operation and said placeholder node further includes the step of forcing said second access operation to be scheduled before said placeholder node.

14. (Original to parent, amended once) The method of claim 11,

wherein said first access operation is chosen from a[the] group of access operations including a signal read and a port read,

said second access operation is chosen from the group of access operations including a signal read and a port read, and

the step of constraining said scheduling order of said second access operation and said placeholder node further includes the step of forcing said second access operation to be scheduled simultaneous with, or before said placeholder node.

15. (Original to parent) The method of claim 11, wherein the step of constraining said scheduling order of said second access operation and said placeholder node further includes the step of forcing said second access operation to be scheduled before said placeholder node.

16. (Original to parent) The method of claim 11, wherein the step of node-locking said placeholder node further includes the step of creating a template which includes said placeholder node and said first access operation.

17. (Original to parent) The method of claim 11, wherein n is equal to an initiation interval of said pipeline multiplied by a number of iterations of said loop which execute between said first access operation and said second access operation.

18. (Original to parent) A system for building, in a memory, a digital circuit representation which implements the behavior of a text description in said memory, said system having a processor coupled to a memory unit wherein said processor is programmed to perform logic processing, said system comprising:

parsing logic for parsing said text description into a parsed text description, said text description including a loop with a delayed signal assignment having a delay value;

translating logic for translating said parsed text description into said digital circuit representation, said digital circuit including a pipeline; and

latency setting logic for setting a latency value of said pipeline to be said delay value of said delayed signal assignment.

19. (Original to parent) A system as described in claim 18, wherein said pipeline implements said loop.

20. (Original to parent) A system as described in claim 19, wherein said loop further includes a number, n, of wait statements, said system further comprising initiation interval setting logic for setting an initiation interval of said pipeline to be equal to n.

21. (Original to parent) A computer program product comprising:

a computer usable medium having computer readable code embodied therein for building a digital circuit representation from a text description of a digital circuit, the computer program product comprising:

computer readable program code devices configured to cause a computer to effect parsing said text description, said text description including a loop with a delayed signal assignment having a delay value;

computer readable program code devices configured to cause a computer to effect translating said text description into said digital circuit representation including a pipeline; and

computer readable program code devices configured to cause a computer to effect setting a latency of said pipeline equal to said delay value.

22. (Original to parent) The computer program product of claim 21 wherein said loop further includes N wait statements, where N is greater than zero, said computer program product further comprising computer readable program code devices configured to cause a computer to effect setting an initiation interval of said pipeline equal to N.

23. (New) A method performed by a data processing system having a memory, comprising the steps of:

parsing a text description of a circuit, said text description stored in the memory, said text description including a loop with N wait statements, where N is greater than zero;

translating said text description into a digital circuit representation in said memory, said digital circuit representation including a pipeline; and

setting an initiation interval of said pipeline equal to N.

24. (New) The method of claim 23, wherein the wait statements are VHDL wait statements.

25. (New) The method of claim 23, wherein the wait statements transition on Verilog HDL @posedge statements.

26. (New) The method of claim 23, wherein the wait statements transition on Verilog HDL @negedge statements.

27. (New) A system for building, in a memory, a digital circuit representation which implements the behavior of a text description in said memory, said system having a processor coupled to a memory unit wherein said processor is programmed to perform logic processing, said system comprising:

parsing logic for parsing said text description into a parsed text description, said text description including a loop with N wait statements, where N is greater than zero;

translating logic for translating said parsed text description into said digital circuit representation, said digital circuit including a pipeline; and

initiation interval setting logic for setting an initiation interval of said pipeline equal to N.

28. (New) The system of claim 27, wherein the wait statements are VHDL wait statements.

29. (New) The system of claim 27, wherein the wait statements transition on Verilog HDL @posedge statements.

30. (New) The system of claim 27, wherein the wait statements transition on Verilog HDL @negedge statements.

31. (New) A computer program product comprising a computer usable medium having computer readable code embodied therein for building a digital circuit representation from a text description of a digital circuit, the computer program product comprising:

computer readable program code devices configured to cause a computer to effect parsing said text description, said text description including a loop with N wait statements, where N is greater than zero;

computer readable program code devices configured to cause a computer to effect translating said text description into said digital circuit representation including a pipeline; and

computer readable program code devices configured to cause a computer to effect setting an initiation interval of said pipeline equal to N.

32. (New) The method of claim 31, wherein the wait statements are VHDL wait statements.

33. (New) The method of claim 31, wherein the wait statements transition on Verilog HDL @posedge statements.

34. (New) The method of claim 31, wherein the wait statements transition on Verilog HDL @negedge statements.

35. (New) The method of claim 1, wherein said loop further includes N clock statements, where N is greater than zero, said method further comprising the step of setting an initiation interval of said pipeline equal to N.

36. (New) A system as described in claim 18, wherein said loop further includes a number, n, of clock statements, said system further comprising initiation interval setting logic for setting an initiation interval of said pipeline to be equal to n.

37. (New) The computer program product of claim 21 wherein said loop further includes N clock statements, where N is greater than zero, said computer program product further comprising computer readable program code devices configured to cause a computer to effect setting an initiation interval of said pipeline equal to N.

38. (New) A method performed by a data processing system having a memory, comprising the steps of:

parsing a text description of a circuit, said text description stored in the memory, said text description including a loop with N clock statements, where N is greater than zero;

translating said text description into a digital circuit representation in said memory, said digital circuit representation including a pipeline; and

setting an initiation interval of said pipeline equal to N.

39. (New) A system for building, in a memory, a digital circuit representation which implements the behavior of a text description in said memory, said system having a processor coupled to a memory unit wherein said processor is programmed to perform logic processing, said system comprising:

parsing logic for parsing said text description into a parsed text description, said text description including a loop with N clock statements, where N is greater than zero;

translating logic for translating said parsed text description into said digital circuit representation, said digital circuit including a pipeline; and

initiation interval setting logic for setting an initiation interval of said pipeline equal to N.

40. (New) A computer program product comprising a computer usable medium having computer readable code embodied therein for building a digital circuit representation from a text description of a digital circuit, the computer program product comprising:

computer readable program code devices configured to cause a computer to effect parsing said text description, said text description including a loop with N clock statements, where N is greater than zero;

computer readable program code devices configured to cause a computer to effect translating said text description into said digital circuit representation including a pipeline; and

computer readable program code devices configured to cause a computer to effect setting an initiation interval of said pipeline equal to N.